STIC Search Report
Biotech-Chem Library

STIC Database Tracking Number: 203077

TO: Aaron Austin **Location: Remsen 5e74** **Wednesday, September 27, 2006** **Art Unit: 1775** **Phone: 571-272-8935** **Serial Number: 10 / 792003**	**From: Jan Delaval** **Location: EIC 1700** **Remsen 4a30** **Phone: 571-272-2504** **jan.delaval@uspto.gov**

Search Notes

For claims 10, 12 & 13 → WO ref → corresponds to present appl filed on same date

→ cl 16 was not found

Banks, Kendra 203077

From: AARON AUSTIN [Aaron.Austin@uspto.gov]
Sent: Wednesday, September 27, 2006 8:28 AM
To: STIC-EIC1700
Subject: Database Search Request, Serial Number: 10792003

Requester:
AARON AUSTIN (P/1775)
Art Unit:
GROUP ART UNIT 1775
Employee Number:
82019
Office Location:
REM 05E74
Phone Number:
(571)272-8935
Mailbox Number:

Case serial number:
10792003
Class / Subclass(es):
428/678,636,637,926,934; 416/241R
Earliest Priority Filing Date:
3/2/04
Format preferred for results:
E-mail
Search Topic Information:
I am looking for nickel-based alloys (particularly MCrAlY bond coats for turbine engines) with the following 4 embodiments:

Claim 10
Element - Range Weight %
Co - about 15 - about 22
Cr - about 15- about 25
Al - about 8- about 15
Y - about 0.1- about 1.0
Pt - about 20- about 35
Hf - about 1.0- about 5.0
Si - about 1.0- about 5.0
Zr - 0 - about -3.0
Ta - 0 - about 5.0
Re - about 1.0- about 5.0
Ru - about 1.0- about 5.0
Ni - remainder

Claim 12
Element - Weight %
Co - about 20
Cr - about 25
AI - about 13
Y - about 0.3
Hf - about 2.0
Si - about 0.65
Re - about 3.0
Ni - remainder

Claim 13
Element - Weight %
Co - about 20
Cr - about 22

Al - about 13
Y - about 0.3
Hf - about 2.0
Si - about 0.65
Re - about 3.0
Ru - about 1.5
Ni - remainder

Claim 16
Element - Weight %
Co - about 15 - about 22
Cr - about 15 - about 25
Al - about 8 - about 15
Y - about 0.1 - about 1.0
Hf - about 1.0 - about 5.0
Si - about 1.0 - about 5.0
Zr - about 1.0 - about 3.0
Ta - about 1.0 - about 5.0
Re - about 1.0 - about 5.0
Ru - about 1.0 - about 5.0
N - remainder

Special Instructions and Other Comments:

STIC Search Results Feedback Form

USPTO

EIC1700

Questions about the scope or the results of the search? Contact *the EIC searcher or contact:*

Kathleen Fuller, EIC 1700 Team Leader
571/272-2505 REMSEN 4B28

Voluntary Results Feedback Form

- *I am an examiner in Workgroup:* [ ] *Example: 1713*
- *Relevant prior art found, search results used as follows.*
  - ☐ 102 rejection
  - ☐ 103 rejection
  - ☐ Cited as being of interest.
  - ☐ Helped examiner better understand the invention.
  - ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
  (journal articles, conference proceedings, new product announcements etc.)

- *Relevant prior art not found:*
  - ☐ Results verified the lack of relevant prior art (helped determine patentability).
  - ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

```
=> fil reg
FILE 'REGISTRY' ENTERED AT 16:05:17 ON 27 SEP 2006
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Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES:   26 SEP 2006  HIGHEST RN 908803-03-2
DICTIONARY FILE UPDATES:  26 SEP 2006  HIGHEST RN 908803-03-2

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH June 30, 2006

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document.  For information
on property searching in REGISTRY, refer to:

http://www.cas.org/ONLINE/UG/regprops.html

=> d l42 ide can tot

L42  ANSWER 1 OF 6  REGISTRY  COPYRIGHT 2006 ACS on STN
RN   880354-78-9  REGISTRY
ED   Entered STN:  13 Apr 2006
CN   Nickel alloy, base, Ni 38,Cr 22,Co 20,Al 13,Re 3,Hf 2,Ru 1.5,Si 0.6,Y 0.3
     (9CI)  (CA INDEX NAME)
MF   Al . Co . Cr . Hf . Ni . Re . Ru . Si . Y
CI   AYS
SR   CA
LC   STN Files:   CA, CAPLUS
```

Component	Component Percent	Component Registry Number
Ni	38	7440-02-0
Cr	22	7440-47-3
Co	20	7440-48-4
Al	13	7429-90-5
Re	3	7440-15-5
Hf	2	7440-58-6
Ru	1.5	7440-18-8
Si	0.6	7440-21-3
Y	0.3	7440-65-5

```
              1 REFERENCES IN FILE CA (1907 TO DATE)
              1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE   1:  144:335551

L42  ANSWER 2 OF 6  REGISTRY  COPYRIGHT 2006 ACS on STN
RN   880354-77-8  REGISTRY
ED   Entered STN:  13 Apr 2006
CN   Nickel alloy, base, Ni 36,Cr 25,Co 20,Al 13,Re 3,Hf 2,Si 0.6,Y 0.3 (9CI)
```


Claim 13

exact → bad data?

priority : 20040302

→ no good

(CA INDEX NAME)
MF **Al . Co . Cr . Hf . Ni . Re . Si . Y**
CI AYS
SR CA
LC STN Files: CA, CAPLUS

Component	Component Percent	Component Registry Number
Ni	36	7440-02-0
Cr	25	7440-47-3
Co	20	7440-48-4
Al	13	7429-90-5
Re	3	7440-15-5
Hf	2	7440-58-6
Si	0.6	7440-21-3
Y	0.3	7440-65-5

Claim 12
exact → bad date?

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 144:335551

L42 ANSWER 3 OF 6 REGISTRY COPYRIGHT 2006 ACS on STN
RN **880354-76-7** REGISTRY
ED Entered STN: 13 Apr 2006
CN Nickel alloy, base, Ni 0-62,Pt 0-35,Cr 15-25,Co 15-22,Al 8-15,Hf 0-5,Re 0-5,Ru 0-5,Si 0-5,Ta 0-5,Zr 0-3,Y 0.1-1 (9CI) (CA INDEX NAME)
MF **Al . Co . Cr . Hf . Ni . Pt . Re . Ru . Si . Ta . Y . Zr**
CI AYS
SR CA
LC STN Files: CA, CAPLUS

Component	Component Percent	Component Registry Number
Ni	0 - 62	7440-02-0
Pt	0 - 35	7440-06-4
Cr	15 - 25	7440-47-3
Co	15 - 22	7440-48-4
Al	8 - 15	7429-90-5
Hf	0 - 5	7440-58-6
Re	0 - 5	7440-15-5
Ru	0 - 5	7440-18-8
Si	0 - 5	7440-21-3
Ta	0 - 5	7440-25-7
Zr	0 - 3	7440-67-7
Y	0.1 - 1	7440-65-5

Claim 10
~~good exact~~ → bad date?

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 144:335551

L42 ANSWER 4 OF 6 REGISTRY COPYRIGHT 2006 ACS on STN
RN **880354-75-6** REGISTRY
ED Entered STN: 13 Apr 2006
CN Nickel alloy, base, Ni 0-36,Pt 20-35,Cr 15-25,Co 15-22,Al 8-15,Hf 1-5,Re 1-5,Ru 1-5,Si 1-5,Ta 1-5,Zr 1-3,Y 0.1-1 (9CI) (CA INDEX NAME)
MF **Al . Co . Cr . Hf . Ni . Pt . Re . Ru . Si . Ta . Y . Zr**

CI AYS
SR CA
LC STN Files: CA, CAPLUS

Component	Component Percent	Component Registry Number
Ni	0 - 36	7440-02-0
Pt	20 - 35	7440-06-4
Cr	15 - 25	7440-47-3
Co	15 - 22	7440-48-4
Al	8 - 15	7429-90-5
Hf	1 - 5	7440-58-6
Re	1 - 5	7440-15-5
Ru	1 - 5	7440-18-8
Si	1 - 5	7440-21-3
Ta	1 - 5	7440-25-7
Zr	1 - 3	7440-67-7
Y	0.1 - 1	7440-65-5

Claim 10
good (almost exact)
⇒ bad date ?

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 144:335551

L42 ANSWER 5 OF 6 REGISTRY COPYRIGHT 2006 ACS on STN
RN 540788-35-0 REGISTRY
ED Entered STN: 02 Jul 2003
CN Nickel alloy, base, Ni 61,Cr 18,Co 10,Al 6,Re 2,Si 1.6,Y 1,Hf 0.8 (9CI) (CA INDEX NAME)
MF **Al . Co . Cr . Hf . Ni . Re . Si . Y**
CI AYS
SR CA
LC STN Files: CA, CAPLUS, USPAT2, USPATFULL

Component	Component Percent	Component Registry Number
Ni	61	7440-02-0
Cr	18	7440-47-3
Co	10	7440-48-4
Al	6	7429-90-5
Re	2	7440-15-5
Si	1.6	7440-21-3
Y	1	7440-65-5
Hf	0.8	7440-58-6

*
Claim 12
not close enough

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

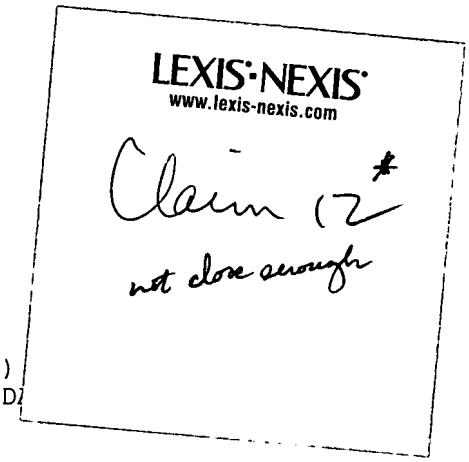
REFERENCE 1: 139:40128

L42 ANSWER 6 OF 6 REGISTRY COPYRIGHT 2006 ACS on STN
RN 540788-32-7 REGISTRY
ED Entered STN: 02 Jul 2003
CN Nickel alloy, base, Ni 62,Cr 18,Co 10,Al 6.5,Re 2,Si 1,Hf 0.5,Y 0.3 (9CI) (CA INDEX NAME)
MF **Al . Co . Cr . Hf . Ni . Re . Si . Y**
CI AYS
SR CA

LC STN Files: CA, CAPLUS, USPAT2, USPATFULL

Component	Component Percent	Component Registry Number
Ni	62	7440-02-0
Cr	18	7440-47-3
Co	10	7440-48-4
Al	6.5	7429-90-5
Re	2	7440-15-5
Si	1	7440-21-3
Hf	0.5	7440-58-6
Y	0.3	7440-65-5

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO D



REFERENCE 1: 139:40128

=> fil uspatful
FILE 'USPATFULL' ENTERED AT 16:05:24 ON 27 SEP 2006
CA INDEXING COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY (ACS)

FILE COVERS 1971 TO PATENT PUBLICATION DATE: 26 Sep 2006 (20060926/PD)
FILE LAST UPDATED: 26 Sep 2006 (20060926/ED)
HIGHEST GRANTED PATENT NUMBER: US7114185
HIGHEST APPLICATION PUBLICATION NUMBER: US2006212984
CA INDEXING IS CURRENT THROUGH 26 Sep 2006 (20060926/UPCA)
ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 26 Sep 2006 (20060926/PD)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Jun 2006
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Jun 2006

=> d bib abs hitstr 147

L47 ANSWER 1 OF 1 USPATFULL on STN
AN 2003:213503 USPATFULL
TI High temperature corrosion resistant alloy, thermal barrier coating material, and gas turbine using high temperature corrosion resistant alloy
IN Oguma, Hidetaka, Takasago-shi, JAPAN
Okada, Ikuo, Takasago-shi, JAPAN
Torigoe, Taiji, Takasago-shi, JAPAN
Takahashi, Kouji, Takasago-shi, JAPAN
PA MITSUBISHI HEAVY INDUSTRIES, LTD., Tokyo, JAPAN (non-U.S. corporation)
PI US 2003148140 A1 20030807
US 6756131 B2 20040629
AI US 2002-316070 A1 20021211 (10)
PRAI JP 2001-383689 20011217
DT Utility
FS APPLICATION
LREP OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C., 1940 DUKE STREET, ALEXANDRIA, VA, 22314
CLMN Number of Claims: 10
ECL Exemplary Claim: 1
DRWN 5 Drawing Page(s)
LN.CNT 694
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A high temperature corrosion resistant alloy composition comprising, in

addition to Ni, 0.1 to 12% by weight of Co, 10 to 30% by weight of Cr, 4 to 15% by weight of Al, 0.1 to 5% by weight of Y, and 0.5 to 10% by weight of Re. The high temperature corrosion resistant alloy composition has an excellent oxidation resistance and ductility and is suitable for use in a bonding layer of a thermal barrier coating material.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
IT **540788-32-7 540788-35-0**
(oxidation resistant and ductile alloy, bonding layer under ceramic thermal barrier coating; high-temperature corrosion-resistant alloy and ceramic thermal barrier coating material with metal bonding layer used in gas turbine)
RN 540788-32-7 USPATFULL
CN Nickel alloy, base, Ni 62,Cr 18,Co 10,Al 6.5,Re 2,Si 1,Hf 0.5,Y 0.3 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Ni	62	7440-02-0
Cr	18	7440-47-3
Co	10	7440-48-4
Al	6.5	7429-90-5
Re	2	7440-15-5
Si	1	7440-21-3
Hf	0.5	7440-58-6
Y	0.3	7440-65-5

RN 540788-35-0 USPATFULL
CN Nickel alloy, base, Ni 61,Cr 18,Co 10,Al 6,Re 2,Si 1.6,Y 1,Hf 0.8 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Ni	61	7440-02-0
Cr	18	7440-47-3
Co	10	7440-48-4
Al	6	7429-90-5
Re	2	7440-15-5
Si	1.6	7440-21-3
Y	1	7440-65-5
Hf	0.8	7440-58-6

=> fil hcaplus
FILE 'HCAPLUS' ENTERED AT 16:05:37 ON 27 SEP 2006
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FILE COVERS 1907 - 27 Sep 2006 VOL 145 ISS 14
FILE LAST UPDATED: 26 Sep 2006 (20060926/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d 146 all hitstr tot

L46 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2006:333261 HCAPLUS
DN 144:335551
ED Entered STN: 12 Apr 2006
TI Modified **MCrAlY** coatings on turbine blade tips with improved durability
IN **Hu, Yiping; Hehmann, William, F.**
PA **Honeywell International Inc., USA**
SO PCT Int. Appl., 36 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C22C
CC 56-6 (Nonferrous Metals and Alloys)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2006025865	A2	20060309	WO 2005-US6833	20050302 <--
WO 2006025865	A3	20060615		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

PRAI US 2004-792003 A 20040302 <--
CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2006025865	ICM	C22C
	IPCI	C22C0019-05 [I,C]; C22C0019-05 [I,A]
	ECLA	C22C019/05R

AB There is provided a method for depositing a modified **MCrAlY** coating on a turbine blade tip. The method utilizes laser deposition techniques to provide a metallurgical bond between a turbine blade substrate, such as a superalloy substrate, and the modified **MCrAlY** composition Further the modified **MCrAlY** coating has sufficient thickness such that a post-welding grinding operation to size the turbine blade to a desired dimension will not remove the modified **MCrAlY** coating entirely. The modified **MCrAlY** coating thus remains on the finished turbine blade tip after grinding.
ST superalloy **MCrAlY** coating turbine blade laser deposition turbine

blade
IT Turbines
(blades, substrate; modified **MCrAlY** coatings on turbine blade tips with improved durability)
IT Coating materials
(heat-resistant; modified **MCrAlY** coatings on turbine blade tips with improved durability)
IT Coating process
(laser-induced; modified **MCrAlY** coatings on turbine blade tips with improved durability)
IT Superalloys
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(substrate; modified **MCrAlY** coatings on turbine blade tips with improved durability)
IT **202606-06-2, MCrAlY**
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(coating; modified **MCrAlY** coatings on turbine blade tips with improved durability)
IT **880354-75-6 880354-76-7 880354-77-8 880354-78-9**
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(heat-resistant coating alloy; modified **MCrAlY** coatings on turbine blade tips with improved durability)
IT **202606-06-2, MCrAlY**
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(coating; modified **MCrAlY** coatings on turbine blade tips with improved durability)
RN 202606-06-2 HCAPLUS
CN MCrAlY (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **880354-75-6 880354-76-7 880354-77-8 880354-78-9**
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(heat-resistant coating alloy; modified **MCrAlY** coatings on turbine blade tips with improved durability)
RN 880354-75-6 HCAPLUS
CN Nickel alloy, base, Ni 0-36,Pt 20-35,Cr 15-25,Co 15-22,Al 8-15,Hf 1-5,Re 1-5,Ru 1-5,Si 1-5,Ta 1-5,Zr 1-3,Y 0.1-1 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Ni	0 - 36	7440-02-0
Pt	20 - 35	7440-06-4
Cr	15 - 25	7440-47-3
Co	15 - 22	7440-48-4
Al	8 - 15	7429-90-5
Hf	1 - 5	7440-58-6
Re	1 - 5	7440-15-5
Ru	1 - 5	7440-18-8
Si	1 - 5	7440-21-3

Ta	1	-	5	7440-25-7
Zr	1	-	3	7440-67-7
Y	0.1	-	1	7440-65-5

RN 880354-76-7 HCAPLUS
CN Nickel alloy, base, Ni 0-62,Pt 0-35,Cr 15-25,Co 15-22,Al 8-15,Hf 0-5,Re 0-5,Ru 0-5,Si 0-5,Ta 0-5,Zr 0-3,Y 0.1-1 (9CI) (CA INDEX NAME)

Component	Component Percent			Component Registry Number
Ni	0	-	62	7440-02-0
Pt	0	-	35	7440-06-4
Cr	15	-	25	7440-47-3
Co	15	-	22	7440-48-4
Al	8	-	15	7429-90-5
Hf	0	-	5	7440-58-6
Re	0	-	5	7440-15-5
Ru	0	-	5	7440-18-8
Si	0	-	5	7440-21-3
Ta	0	-	5	7440-25-7
Zr	0	-	3	7440-67-7
Y	0.1	-	1	7440-65-5

RN 880354-77-8 HCAPLUS
CN Nickel alloy, base, Ni 36,Cr 25,Co 20,Al 13,Re 3,Hf 2,Si 0.6,Y 0.3 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Ni	36	7440-02-0
Cr	25	7440-47-3
Co	20	7440-48-4
Al	13	7429-90-5
Re	3	7440-15-5
Hf	2	7440-58-6
Si	0.6	7440-21-3
Y	0.3	7440-65-5

RN 880354-78-9 HCAPLUS
CN Nickel alloy, base, Ni 38,Cr 22,Co 20,Al 13,Re 3,Hf 2,Ru 1.5,Si 0.6,Y 0.3 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Ni	38	7440-02-0
Cr	22	7440-47-3
Co	20	7440-48-4
Al	13	7429-90-5
Re	3	7440-15-5
Hf	2	7440-58-6
Ru	1.5	7440-18-8
Si	0.6	7440-21-3
Y	0.3	7440-65-5

L46 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:470353 HCAPLUS

DN 139:40128
ED Entered STN: 20 Jun 2003
TI High-temperature corrosion-resistant alloy and ceramic thermal barrier coating material with metal bonding layer used in gas turbine
IN Hidetaka, Oguma; Ikuo, Okada; Taiji, Torigoe; Kouji, Takahashi
PA Mitsubishi Heavy Industries, Ltd., Japan
SO Eur. Pat. Appl., 17 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM C22C0019-05
ICS C23C0004-00; C23C0030-00; C23C0028-00
CC 56-3 (Nonferrous Metals and Alloys)
Section cross-reference(s): 57
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1319730	A1	20030618	EP 2002-27556	20021209
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
	JP 2003183752	A2	20030703	JP 2001-383689	20011217
	CA 2413649	AA	20030617	CA 2002-2413649	20021205
	US 2003148140	A1	20030807	US 2002-316070	20021211
	US 6756131	B2	20040629		
	CN 1427085	A	20030702	CN 2002-157165	20021217
PRAI	JP 2001-383689	A	20011217		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 1319730	ICM	C22C0019-05
	ICS	C23C0004-00; C23C0030-00; C23C0028-00
	IPCI	C22C0019-05 [ICM,7]; C23C0004-00 [ICS,7]; C23C0030-00 [ICS,7]; C23C0028-00 [ICS,7]
	IPCR	C22C0019-05 [I,A]; C22C0019-05 [I,C*]; C23C0004-02 [I,A]; C23C0004-02 [I,C*]; C23C0004-08 [I,A]; C23C0004-08 [I,C*]; C23C0028-00 [I,A]; C23C0028-00 [I,C*]; C23C0030-00 [I,A]; C23C0030-00 [I,C*]
	ECLA	C22C019/05R; C23C004/02; C23C004/08B; C23C028/00; C23C030/00
JP 2003183752	IPCI	C22C0019-05 [ICM,7]; C23C0004-08 [ICS,7]; C23C0004-10 [ICS,7]; C23C0014-14 [ICS,7]; F01D0005-28 [ICS,7]
	IPCR	C22C0019-05 [I,A]; C22C0019-05 [I,C*]; C23C0004-02 [I,A]; C23C0004-02 [I,C*]; C23C0004-08 [I,A]; C23C0004-08 [I,C*]; C23C0028-00 [I,A]; C23C0028-00 [I,C*]; C23C0030-00 [I,A]; C23C0030-00 [I,C*]
CA 2413649	IPCI	C22C0030-00 [ICM,7]; C09K0015-02 [ICS,7]; C09K0015-00 [ICS,7,C*]; C23C0024-04 [ICS,7]; C23C0024-00 [ICS,7,C*]; F01D0005-14 [ICS,7]; F01D0005-28 [ICS,7]
	IPCR	C22C0019-05 [I,A]; C22C0019-05 [I,C*]; C23C0004-02 [I,A]; C23C0004-02 [I,C*]; C23C0004-08 [I,A]; C23C0004-08 [I,C*]; C23C0028-00 [I,A]; C23C0028-00 [I,C*]; C23C0030-00 [I,A]; C23C0030-00 [I,C*]
US 2003148140	IPCI	B32B0015-04 [ICM,7]
	IPCR	C22C0019-05 [I,A]; C22C0019-05 [I,C*]; C23C0004-02 [I,A]; C23C0004-02 [I,C*]; C23C0004-08 [I,A]; C23C0004-08 [I,C*]; C23C0028-00 [I,A]; C23C0028-00 [I,C*]; C23C0030-00 [I,A]; C23C0030-00 [I,C*]
	NCL	428/629.000; 416/241.000B; 416/241.000R; 420/444.000; 428/633.000; 428/680.000
	ECLA	C22C019/05R; C23C004/02; C23C004/08B; C23C028/00;

C23C030/00

CN 1427085 IPCI C22C0019-05 [ICM,7]; C23C0004-10 [ICS,7]; F01D0005-28 [ICS,7]

IPCR C22C0019-05 [I,A]; C22C0019-05 [I,C*]; C23C0004-02 [I,A]; C23C0004-02 [I,C*]; C23C0004-08 [I,A]; C23C0004-08 [I,C*]; C23C0028-00 [I,A]; C23C0028-00 [I,C*]; C23C0030-00 [I,A]; C23C0030-00 [I,C*]

AB A high-temperature corrosion-resistant alloy contains Co 0.1-12, Cr 10-30, Al 4-15, Y 0.1-5, Re 0.5-10 weight% and Ni in the balance, for example, Co 10, Cr 20, Al 6, Y 0.3, Re 4, and Ni in the balance. Optionally, the alloy may contain also Hf 0.01-0.7 and Si 0.01-1.5 weight%. The high temperature corrosion resistant alloy composition has an excellent oxidation resistance and ductility and is suitable for use in a bonding layer of a thermal barrier coating material. A thermal barrier coating material comprises a heat-resistant alloy base material (e.g., a superalloy containing Ni-22Cr-9Mo-8Co-1Al); a metal bonding layer disposed on said base material, and a ceramic layer disposed on said metal bonding layer. Said metal bonding layer is made into a film by using an electron beam deposition method.

ST nickel alloy ceramic thermal barrier coating gas turbine

IT Thermal barrier coatings
(ceramic; high-temperature corrosion-resistant alloy and ceramic thermal barrier coating material with metal bonding layer used in gas turbine)

IT Vapor deposition process
(electron-beam; high-temperature corrosion-resistant alloy and ceramic thermal barrier coating material with metal bonding layer used in gas turbine)

IT Turbines
(high-temperature corrosion-resistant alloy and ceramic thermal barrier coating material with metal bonding layer used in gas turbine)

IT Ceramic coatings
(thermally insulating; high-temperature corrosion-resistant alloy and ceramic thermal barrier coating material with metal bonding layer used in gas turbine)

IT 1344-28-1, Alumina, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(component of thermal barrier coating; high-temperature corrosion-resistant alloy and ceramic thermal barrier coating material with metal bonding layer used in gas turbine)

IT 148377-84-8 540788-28-1 540788-29-2 540788-30-5 540788-31-6 **540788-32-7** 540788-33-8 540788-34-9 **540788-35-0**
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(oxidation resistant and ductile alloy, bonding layer under ceramic thermal barrier coating; high-temperature corrosion-resistant alloy and ceramic thermal barrier coating material with metal bonding layer used in gas turbine)

IT 540788-27-0
RL: TEM (Technical or engineered material use); USES (Uses)
(substrate, gas turbine superalloy; high-temperature corrosion-resistant alloy and ceramic thermal barrier coating material with metal bonding layer used in gas turbine)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Antolotti, N; WO 9902745 A 1999 HCAPLUS
(2) Czech Norbert; US 5939204 A 1999 HCAPLUS
(3) Siemens Ag; EP 0412397 A 1991 HCAPLUS
(4) Siemens Ag; WO 9612049 A 1996 HCAPLUS
(5) Sulzer Metco Us Inc; WO 0172455 A 2001 HCAPLUS

(6) Toennes, C; WO 9923265 A 1999 HCAPLUS
IT **540788-32-7 540788-35-0**
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(oxidation resistant and ductile alloy, bonding layer under ceramic thermal barrier coating; high-temperature corrosion-resistant alloy and ceramic thermal barrier coating material with metal bonding layer used in gas turbine)
RN 540788-32-7 HCAPLUS
CN Nickel alloy, base, Ni 62,Cr 18,Co 10,Al 6.5,Re 2,Si 1,Hf 0.5,Y 0.3 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Ni	62	7440-02-0
Cr	18	7440-47-3
Co	10	7440-48-4
Al	6.5	7429-90-5
Re	2	7440-15-5
Si	1	7440-21-3
Hf	0.5	7440-58-6
Y	0.3	7440-65-5

RN 540788-35-0 HCAPLUS
CN Nickel alloy, base, Ni 61,Cr 18,Co 10,Al 6,Re 2,Si 1.6,Y 1,Hf 0.8 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Ni	61	7440-02-0
Cr	18	7440-47-3
Co	10	7440-48-4
Al	6	7429-90-5
Re	2	7440-15-5
Si	1.6	7440-21-3
Y	1	7440-65-5
Hf	0.8	7440-58-6

=> fil reg
FILE 'REGISTRY' ENTERED AT 16:05:53 ON 27 SEP 2006
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 26 SEP 2006 HIGHEST RN 908803-03-2
DICTIONARY FILE UPDATES: 26 SEP 2006 HIGHEST RN 908803-03-2

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REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

http://www.cas.org/ONLINE/UG/regprops.html

=> d l13 ide can

L13 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2006 ACS on STN
RN **202606-06-2** REGISTRY
ED Entered STN: 12 Mar 1998
CN **MCrAlY (9CI)** (CA INDEX NAME)
MF Unspecified
CI AYS, MAN
SR CA
LC STN Files: CA, CAPLUS, USPAT2, USPATFULL

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

95 REFERENCES IN FILE CA (1907 TO DATE)
95 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 145:193696

REFERENCE 2: 145:150707

REFERENCE 3: 145:112010

REFERENCE 4: 145:12678

REFERENCE 5: 144:437685

REFERENCE 6: 144:417707

REFERENCE 7: 144:335551

REFERENCE 8: 144:195925

REFERENCE 9: 143:481160

REFERENCE 10: 143:425652

=> d his

(FILE 'HOME' ENTERED AT 15:39:22 ON 27 SEP 2006)
SET COST OFF

FILE 'HCAPLUS' ENTERED AT 15:39:37 ON 27 SEP 2006
L1 1 S (WO2005-US06833 OR US2004-792003#)/AP,PRN
E HU/AU
E HU Y/AU
L2 526 S E3
L3 9 S E18
E HU YI/AU

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L4          318 S E3,E35
                E HU YIP/AU
L5           59 S E5
                E HU NAME/AU
L6            1 S E4
                E YIPING/AU
L7            1 S E7
                E HEHMAN/AU
L8            9 S E23
                E HONEYWELL/PA,CS
L9         4196 S E3,E4 OR HONEYWELL?/PA,CS
L10         667 S MCRALY
                SEL RN L1

     FILE 'REGISTRY' ENTERED AT 15:42:26 ON 27 SEP 2006
L11           5 S E1-E5
                E MCRALY/CN
L12           1 S E3
L13           1 S L11 AND L12

     FILE 'HCAPLUS' ENTERED AT 15:43:00 ON 27 SEP 2006
L14          95 S L13
L15         667 S L10,L14
L16           4 S L15 AND L1-L9

     FILE 'REGISTRY' ENTERED AT 15:43:44 ON 27 SEP 2006
L17           3 S (CO AND CR AND AL AND Y AND PT AND HF AND SI AND RE AND RU AN
L18           2 S L17 NOT C/ELS
L19           1 S L17 NOT L18
L20          50 S (CO AND CR AND AL AND Y AND HF AND SI AND RE AND NI)/ELS
L21          13 S (CO AND CR AND AL AND Y AND HF AND SI AND RE AND RU AND NI)/E
L22           1 S L21 AND 9/ELC.SUB
L23          10 S (CO AND CR AND AL AND Y AND HF AND SI AND ZR AND TA AND RE AN
L24           0 S L23 AND 11/ELC.SUB
L25           4 S L11 AND L17-L24
L26           2 S L25 AND L17
L27           1 S L25 AND L22
L28           7 S L23 NOT L17
L29           3 S L20 AND 9/ELC.SUB
L30           1 S L25 AND L29
L31           6 S L18,L22,L25,L26,L27,L29,L30
L32           2 S L31 NOT L25
L33           3 S L20 AND 8/ELC.SUB
L34           8 S L31,L32,L33
L35           4 S L34 NOT L25
L36           2 S L35 NOT TA/ELS
L37           4 S L34 NOT L35
L38           6 S L36,L37
L39           3 S L20 AND 8/ELC.SUB
L40           1 S L29 NOT TA/ELS
L41           6 S L18,L39,L40
L42           6 S L38,L41

     FILE 'HCAOLD' ENTERED AT 16:04:32 ON 27 SEP 2006
L43           0 S L42

     FILE 'HCAPLUS' ENTERED AT 16:04:34 ON 27 SEP 2006
L44           2 S L42
L45           1 S L44 AND L1-L10,L14,L15
L46           2 S L44,L45
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     FILE 'USPATFULL' ENTERED AT 16:05:01 ON 27 SEP 2006
L47           1 S L42

     FILE 'REGISTRY' ENTERED AT 16:05:17 ON 27 SEP 2006

     FILE 'USPATFULL' ENTERED AT 16:05:24 ON 27 SEP 2006

     FILE 'HCAPLUS' ENTERED AT 16:05:37 ON 27 SEP 2006

     FILE 'REGISTRY' ENTERED AT 16:05:53 ON 27 SEP 2006

=> d que l18
L17           3 SEA FILE=REGISTRY ABB=ON  PLU=ON  (CO AND CR AND AL AND Y AND
                PT AND HF AND SI AND RE AND RU AND NI)/ELS
L18           2 SEA FILE=REGISTRY ABB=ON  PLU=ON  L17 NOT C/ELS


=> d que l39
L20          50 SEA FILE=REGISTRY ABB=ON  PLU=ON  (CO AND CR AND AL AND Y AND
                HF AND SI AND RE AND NI)/ELS
L39           3 SEA FILE=REGISTRY ABB=ON  PLU=ON  L20 AND 8/ELC.SUB


=> d que l40
L20          50 SEA FILE=REGISTRY ABB=ON  PLU=ON  (CO AND CR AND AL AND Y AND
                HF AND SI AND RE AND NI)/ELS
L29           3 SEA FILE=REGISTRY ABB=ON  PLU=ON  L20 AND 9/ELC.SUB
L40           1 SEA FILE=REGISTRY ABB=ON  PLU=ON  L29 NOT TA/ELS


=> d que l24
L23          10 SEA FILE=REGISTRY ABB=ON  PLU=ON  (CO AND CR AND AL AND Y AND
                HF AND SI AND ZR AND TA AND RE AND RU AND NI)/ELS
L24           0 SEA FILE=REGISTRY ABB=ON  PLU=ON  L23 AND 11/ELC.SUB


=>
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